

Handwriting & Signature Examination When there's a suspect in a crime and the evidence includes a handwritten note, investigators may call in handwriting experts to see if there's a match. In some cases, it might be the one piece of evidence that gets a suspect charged and eventually convicted. But what if it's a false match? How exactly do experts go about analyzing someone's handwriting? In handwriting analysis, Original documents must be maintained for evidence. Handle original documents as little as possible. Keep them protected in archival sleeves or folders. Never work with original documents. Always make copies to work with (Osborn, 1946). First of all, examine the class characteristics of handwriting as discussed in previous topic. Like examine the spacing between letters and words. Use a ruler to measure typical spacing, examine the relative height, width, and size of letters. Use a ruler to measure these for comparison, examine pen lifts and separations, some letters and combinations will be continued while others may not be connected, look at the beginning and ending strokes of words and letters and any connecting strokes, are there any unusual letter formations such as loops and curls or a mixture of cursive and printing of letters?, Is there any shading of letters due to uneven pressure applied in writing? Examine the slant of the letters. Do they slant left, right, or not at all? Are the slants consistent throughout the writing sample? Measure the angles of slant using a protractor. Examine the baseline habits. Are the words and letters on the baseline or are they above and below. A ruler will be helpful in determining this. Look for flourishes and embellishments. Using small circles to dot i's or for periods, loops of capital letters or ending letters, etc. Are there any unusual letter formations? Look at the placement of diacritics. Are the i's dotted and t's crossed? Individuals tend to dot i's and cross t's in unique fashions. Class characteristics as mentioned, thorough examination may rule out various important factors, before examination of individual characteristics and signs of forgery.

7. Signatures and their examination Signatures serves as mean of identification and are typically used in the course of business to authorize financial transactions or even establish the legality of important documents. Sometimes, the addition of a signature can increase the value of an item, such is the case of celebrity memorabilia. As such, the high value items attached to such signatures make them likely targets of forgery as compared to handwriting. In a

typical signature case, detailed microscopic comparative examinations are made of a set of known ("specimen") signatures and one or more questioned signatures, the writer of which is in doubt. Signature forgery can occur in many ways, including freehand simulation, tracing and image transfer. Alternatively, a signature may be written with some disguise with a view to disavow it at a later time. Chance coincidence in the signatures of two persons is rare but may be possible if the signature is particularly simple. It must be noted that a finding that a signature is genuine does not establish the genuineness of the document as a whole as it may be the product of some form of document manipulation (Fielding et al., 2001). Signatures can be disputed on all kinds of documents including Wills, financial documents, contracts, agreements, cheques, application forms and receipts. Signature verification may be applied to cases involving alleged cases. The authenticity of signatures on business documents such as contracts or agreements often forms the point of contention between two parties in a civil dispute. In such cases, a forensic handwriting expert will compare the signatures on the questioned documents with specimens to determine if the said person could have signed those documents. Attempts to forge signatures usually occur in three ways: • Freehand simulation • Tracing and • Cut-and-paste: either physically or by electronic means using digital software. FDS is also aware of the emerging use of electronic (biometric) signatures. We are familiar with certain technologies used to capture electronic signatures and the forensic analysis software required to interrogate them. At times, there may also be deliberate acts of disguise by the writer, with the intention of denying the authorship of the signature afterwards. For examination of signatures, a forensic document examiner would have to consider the above possibilities and more. Our experienced document examiners are able to provide advice on the relevance of signature examination to your case and answer your queries.

8. Characteristics of Forged handwriting and signatures

Writing in forged documents tends to be slowly written and will show a lack of individuality. Letters tend to have an unnatural appearance as if the forger was drawing the letters. This makes letters inconsistent in the document, shows unnatural starts and stops and a general lack of rhythm to the writing. Any mistakes will show a careful correction. Signatures will be identical.

8.1 Disguised Writing

If a suspect attempts to disguise their writing, they will generally exhibit

inconsistent slant and letter formations with a major change in the size of their letters. Capital letters will be different and they often will use block lettering. As they write, there will be a lack of rhythm, irregular spacing, and unnatural starts and stops. Occasionally they will add excessive ornamentation. Some individuals will try to write with the wrong hand. Signatures are the most frequent type of questioned writing encountered, although a person's handwriting also frequently attracts attention in litigation. Forensic signature examination and forensic handwriting examination are both discussed below. The terms "examination" and "analysis" are often used interchangeably but, in the context of the work that FDS undertakes, their meaning is strictly scientific. Our examiners are forensic experts, not graphologists, and our work does not involve attempting to tell one's personality from their writing ("graphology") (Harris, 1952).

8.2 Normal Hand Forgery

During the creation of this class of non-genuine signature, the writer simply writes someone else's name. There is no attempt made to duplicate or make the forgery look like a genuine signature. Any resemblance to the genuine signature is coincidental. Usually, the perpetrator of this signature does not have a model signature at hand and/or the skill level or forethought to attempt an emulation. If he does not attempt to impart disguise to the writing, the resultant product will display characteristics of the forger's own handwriting. Armed with adequate standards of both the individual whose name is being used and exemplars of the suspect, the document examination may be definitive to the point that not only is the signature declared not genuine, but the forger is also identified (Herkt, 1986).

8.3 Simulation

The simulated signature, or "free hand forgery" as it is sometime known, is the usual bill of fare for the questioned document examiner. This forgery is constructed by using a genuine signature as a model. The forger generates an artistic reproduction of this model. Depending on his skill and amount of practice, the simulation may be quite good and bear remarkable pictorial similarity to the genuine signature. Many simulations created with a model at hand will contain at least some of the general indicators of forgery, such as tremor, hesitation, pen lifts, blunt starts and stops, patching, and static pressure. They will have a slow "drawn" appearance. The practiced simulation is most often a higher quality creation in that the model signature has been memorized and some of the movements used to produce it have become

semi-automatic. This simulation can be written with a more natural fluid manner. Both practiced and non-practiced simulations will still have notable shortcomings. The forger naturally puts his greatest effort into those parts of the name that he expects to fall under the greatest scrutiny. Although letter forms (especially the more prominent, large or beginning letters) may almost duplicate the genuine letters, proportions and height ratios will seldom be correct. Internal portions of the names (smaller, less prominent letters and pen movements) will usually display the greatest divergence from the correct form and movements found in the genuine signature.

8.4 Signature forged by tracing Methods Traced forgeries are generally created by one of three methods: “transmitted light,” “carbon intermediate,” or “pressure indented image.” While tracings may not normally present much of a challenge to the document examiner trying to determine genuineness, the ability to identify the perpetrator is totally precluded. Tracing another’s signature, or for that matter another’s handwriting, is the paramount form of disguise. Total agreement between the model and the questioned signature dictate that the questioned signature was a product of tracing. No two signatures or handwritings, even from the same person are ever totally duplicated (due to natural variation). Just as certainly, total agreement between two, three or more questioned signatures is adequate demonstrative proof of tracing. Of course, the document examiner faced with total agreement between a number of signatures must take care that the model signature (genuine signature) is not one of the signatures in question (Morris and Morris, 2000).

8.5 Transmitted Light Tracing The transmitted light tracing is the simplest of the tracings to produce and the one most often encountered. The paper that is to receive the spurious signature is placed over a document bearing the genuine signature. These documents are then aligned so as to put the genuine signature directly under the selected location for the forgery. These two papers are then held up to a window or other light source, and the transmitted signature image is traced on the receiving document. The indicators of a transmitted light tracing are similar to that of a simulation and the two are difficult to tell apart (unless the model for the tracing is located). Height ratios and proportions in the transmitted light tracing are generally right on the money, however. These two features are frequently incorrect in the simulation (Hilton, 1992).

8.6 Carbon-Medium Tracing

At times, a carbon-medium tracing is the method of choice, especially if the document to receive the tracing is too heavy a weight, such as cardboard, to allow for a good light transmitted image. The carbon tracing is crude method of tracing as it involves two steps; first tracing the writing with the help of the carbon paper and then retracing the drawn traced mark of carbon by pen. During the covering up the traced line, carbon deposition are seen around the periphery of the written line by pen. These are major signs of carbon tracing apart from slow writing speed, blunt start and ends, tremors etc. Because of the almost non-existent use of this sensitized paper in modern day machine copying processes, most document examiners will likely never encounter this problem. However, on occasion a similar phenomenon can be found when NCR (National Cash Register – no carbon required) paper is employed (Huber and Headrick, 1999).

8.7 Pressure Indented Tracing

Similar to a carbon paper tracing, the indented line tracing is produced in essentially the same manner, but does not employ any intermediate reproduction medium. Heavier pressure is used when tracing over the model signature. This pressure leaves an indented “signature” on the receiving document. This is then covered over with a broad-tipped pen, although ballpoint is found on occasion. Almost invariably, the writer misses portions of the indented line. This error may be easily observed using glancing (oblique) light. Other general indications of non-genuineness are similar to those found in simulated forgeries (Nickell, 2005).